

R E P O R T R E S U M E S

ED 016 871

VT 005 036

RESEARCH VISIBILITY. VOCATIONAL EDUCATION IS PEOPLE--HIGH SCHOOL AGE YOUTH.

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REPORT NUMBER BR-7-0633

PUB DATE SEP 67

GRANT OEG-2-7-070633

EDRS PRICE MF-\$0.25 HC-\$0.72 16P.

DESCRIPTORS- *VOCATIONAL EDUCATION, *BIBLIOGRAPHIES, RESEARCH REVIEWS (PUBLICATIONS), DEMONSTRATION PROJECTS, EXPERIMENTAL PROGRAMS, TECHNICAL EDUCATION, DEVELOPMENTAL PROGRAMS, *HIGH SCHOOLS, *EDUCATIONAL RESEARCH, INFORMATION DISSEMINATION, CURRICULUM PLANNING, PROGRAM DEVELOPMENT, EVALUATION,

THE PURPOSE OF THIS PUBLICATION SERIES IS TO GIVE VISIBILITY TO SIGNIFICANT (1) EXPERIMENTAL, DEMONSTRATION, AND PILOT PROGRAMS, (2) UPGRADING INSTITUTES, SEMINARS, AND WORKSHOPS, AND (3) OTHER LEADERSHIP DEVELOPMENT ACTIVITIES FOR TEACHERS, SUPERVISORS, AND ADMINISTRATORS. THIS DISSEMINATION PROJECT IS COOPERATIVELY FINANCED BY THE AMERICAN VOCATIONAL ASSOCIATION AND A VOCATIONAL EDUCATION ACT OF 1963 GRANT ENTITLED "SYNTHESIS AND APPLICATION OF RESEARCH FINDINGS IN VOCATIONAL EDUCATION." THE PRIMARY FOCUS THROUGH MAY 1968 WILL BE ON THE NINE MAJOR AREAS OF RECOMMENDATIONS BY THE PANEL OF CONSULTANTS ON VOCATIONAL EDUCATION. THE AREA COVERED IN THIS ISSUE IS HIGH SCHOOL AGE YOUTH, AND 10 COMPLETED PROJECTS ARE REPORTED UNDER THE TOPICS--(1) PROGRAMS FOR TALENTED OR SPECIAL STUDENTS, (2) MAINTAINING QUALITY STANDARDS, (3) CURRICULUM PLANNING AND CORRELATION, (4) PROGRAM CHANGES TO MEET EVOLVING NEEDS, AND (5) PROGRAM GROWTH AND DEVELOPMENT. "PLAIN TALK," A CONTINUING AUTHOR'S COLUMN, PROVIDES OBSERVATIONS AND SUGGESTIONS FOR A PLAN OF ACTION TO STRENGTHEN VOCATIONAL AND PRACTICAL ARTS EDUCATION THROUGH A STRENGTHENED AND EXPANDED RESEARCH EFFORT. A BIBLIOGRAPHY OF COMPLETED AND ONGOING PROJECTS AND ACTIVITIES INCLUDES 79 OTHER ITEMS. WHEN POSSIBLE, CITED DOCUMENTS WILL BE GIVEN THEIR EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) NUMBER OF THEIR ERIC CLEARINGHOUSE FOR VOCATIONAL AND TECHNICAL EDUCATION NUMBER AS WELL AS AN INDICATION OF AVAILABILITY AND PRICE. THE WORK OF THE PANEL OF CONSULTANTS AND RESEARCH PROVISIONS OF THE VOCATIONAL EDUCATION ACT OF 1963 ARE DISCUSSED. THIS ARTICLE IS PUBLISHED IN THE "AMERICAN VOCATIONAL JOURNAL," VOLUME 42, NUMBER 9, SEPTEMBER 1967. (EM)

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"Research Visibility" is a research project of the American Vocational Association. The purpose is to give visibility to significant research: experimental, demonstration and pilot programs; upgrading institutes, seminars and workshops; and other leadership development activities for teachers, supervisors and administrators. The "Research Visibility" report synthesizes important projects which have been reviewed, selected and analyzed for their value to

vocational, technical and practical arts education, public personnel, and other leaders in education, manpower and related fields. A complete bibliography of significant research and development materials is included.

The project is cooperatively financed by the American Vocational Association and a Vocational Education Act of 1963 grant (OEG 2-75670672, project 7-6-67; "Synthesis and Application of Research Findings in Vocational Education").

VOCATIONAL EDUCATION IS PEOPLE

High School Age Youth

IN THE BEGINNING . . .

• A Panel Reports

" . . . The basic purpose of our vocational education effort is sound and sufficiently broad to provide a basis for meeting future needs. However, the technological changes which have occurred in all occupations call for a review and reevaluation of these (National Vocational Education) acts with a view toward modernization . . . " With this thought, President John F. Kennedy in his February 20, 1961 Message on American Education to Congress, requested the Secretary of Health, Education and Welfare to convene a representative advisory body of concerned and knowledgeable persons, representing all vocational fields and cross-sections of the American people, to make recommendations for improving and extending vocational education programs and services.

Thus, a "Panel of Consultants" on Vocational Education was formed to carry out the President's mandate for bold, progressive action programs to serve adequately the needs of more and more people in a constantly changing technological society.

Convinced that vocational and technical education are sound investments in the people who constitute this Nation's most priceless resource, and that the goal of equality of educational opportunity for all the children of all the people is attainable, the Panel analyzed the people to be served.

Further, to serve people they identified the kinds of services directly bearing on the preparatory, retraining and upgrading functions of vocational education that needed strengthening.

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Vocational and Practical Arts Fields, Field Services and Persons Concerned by R&D

- Agriculture
- Business and Office
- Distribution and Marketing
- Home Economics
- Health
- Industrial Arts
- Trades and Industrial
- Technical
- Vocational Guidance
- * Teachers
- * Consultants
- * Teacher Coordinators
- * Supervisors
- * Administrators
- * Teacher Educators
- * Curriculum Coordinators
- * Human Resource Counselors
- * Manpower Personnel
- * Labor Market Analysis
- * Kindred and Related Services Personnel

RESEARCH VISIBILITY reflects the continuing leadership to vocational and practical arts education of Dr. C. Thomas Olivo, Director, Division of Industrial Education, State Education Department, University of the State of New York.

The organization for the monthly series of this publication, the pattern for reporting and, importantly, the complete writing of this issue represent his work.

PEOPLE ARE TO BE SERVED. . .

After the Panel's recommendations were reported to Congress, the legislature and the President captured the significant expressions of need and ways in which these needs could be met. The Vocational Education Act of 1963 was thus drafted and passed by an almost unanimous vote.

In essence, the Panel and the Act reported that the people to be served fall roughly into four major groups:

- young people of high school age who are preparing to enter the labor market or to become homemakers;
- youth and adults who have completed or left high school and are full-time students preparing to enter the labor force;
- high school age youth with academic, socioeconomic, or other handicaps that prevent them from succeeding in the usual high school program of vocational education; and
- youth and adults who are unemployed, or need retraining, or upgrading, to extend their work skills and technical knowledge to achieve employment stability or to move into higher level jobs.

THE AUTHORITY TO ACT . . .

"To strengthen and improve the quality of vocational education and to expand the vocational education opportunities in the Nation. . ." the Senate and House of Representatives of the United States in Congress assembled, passed, and the President signed into law on December 18, 1963, what became known as the Vocational Education Act of 1963.

The work of the Panel had materially aided the drafters of the new legislation. Right at the beginning, the Act's statement of purpose captured the intent of the soul-searching convictions about people to be served and services in vocational education essential to meet their needs. The purpose is cited here in full because it is within this context that major research effort should be directed if the intent of the people, represented through their legislators, is to be fulfilled.

... SECTION 1. It is the purpose of this part to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State—

IMPLEMENTING THE LAW

The Act, which is also identified commonly as Public Law 88-210, charged the United States Office of Education with the responsibility of carrying out its provisions. Thus, the administration of Section 4 (c) has been delegated to the Bureau of Research and through it to the Division of Comprehensive and Vocational Education Research (DCVER). It should be noted that the Bureau and the Division carry out similar research and development functions for the Office of Education utilizing other sources of Federal funds.

INSTRUCTIONAL EXCELLENCE IS NEEDED. . .

Through quality of instructional programs, certain services had to be strengthened. The Panel said that instructional excellence is directly attributable to:

- teacher excellence;
- excellence in curriculum planning and instructional materials development;
- the quality of total human resource services, including continuous vocational guidance and counseling by qualified and knowledgeable persons (utilizing the total supportive resources of a community, state, and region);
- the nature of leadership development plans and the degree to which qualified potential leaders are identified; and
- the excellence of a planned and correlated progressive program of research, evaluation, demonstration and pilot programs, and innovations directly related and applicable to vocational education. Finally, excellence depends on the vigor with which all of these services are encouraged and supported.

these in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, and those with special educational handicaps—will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training . . .

Now under the use of Federal Funds in what is known as "Section 4 (c)" of the Act, provision is made for the United States Commissioner of Education to use up to ten percent of the sums appropriated "... to make grants to colleges and universities, and other public or nonprofit private agencies and institutions, to State Boards, and with the approval of the appropriate State Board, to local educational agencies, to pay part of the cost of research and training programs and of experimental, development, or pilot programs developed by such institutions, boards, or agencies, and designed to meet the special vocational education needs of youth, particularly youth in economically depressed communities who have academic, socioeconomic, or other handicaps that prevent them from succeeding in regular vocational programs."

Particular facets or major activities of the total research effort are handled in the Division by what are known as "branches." The newly restructured DCVER has four such branches. These are identified as: (1) the Basic Studies Branch, (2) the Instructional Materials and Practices Branch, (3) the Organization and Administration Studies Branch, and (4) the Career Opportunities Branch.

The functions of the Division may be classified roughly as starting with the "mission" stage, then proceeding through program definition, development, implementation, dissemination, and evaluation to the final one of determining future actions following the completion of a project.

SUPPORT OF INSTITUTIONAL PROJECTS WITHIN STATES AND REGIONS

The Division of Comprehensive and Vocational Education Research provides funds to support institutional activities, referred to as "institutional support." A second classification of research investment deals with the support of projects by individuals: "individual project support."

The institutional support group includes: (1) Research Coordinating Units, (2) Vocational Research Centers, and (3) Teacher-Supervisor-Administrator Inservice Institutes.

Research Coordinating Units

Cooperatively between the DCVER and State Education Departments, Research Coordinating Units (RCU) have been established in 44 states. Their common purpose, stated briefly, is to stimulate, encourage, and coordinate research activities among all agencies and groups who have an interest and responsibility for vocational and technical education within a state.

The functions of RCU's may include • the formation of truly representative and knowledgeable State Research Advisory Committees for Vocational Education • the marshaling of total resources for major research and demonstration effort • the identification of significant researchable issues • the formulation of vocational education research philosophy • the development of research proposals • The forwarding of research and related materials generated within the state to the ERIC Clearinghouse for Vocational and Technical Education dissemination of information; and the like.

National Research Centers

Institutional support includes also the two Vocational

and Technical Education Research Centers which have been established: one at North Carolina State University, Raleigh; the other, Ohio State University, Columbus. These Centers concentrate on research which may cut across all vocational education fields and services or may deal with specific issues within a particular field.

One objective is to stimulate and strengthen applied research and development on State, regional and National bases. The Centers also lend encouragement to higher education institutions to become involved in the research effort. And, as may be implied, they conduct research studies to gain and apply new knowledge and to upgrade potential leadership through advanced study and in-service institutes, and assist in the dissemination of research/demonstration information.

The emphasis of the North Carolina Center for Research, Development and Training in Occupational Education is on vocational problems of the South. However, it engages in research activities in other areas throughout the country and translates findings of national significance.

The Center for Research and Leadership Development in Vocational and Technical Education at Ohio State University engages in research, development and training projects which focus on problems of national significance. In addition, it promotes a wide range of leadership development activities in vocational and technical education; and is responsible for a national information retrieval and dissemination system linked with Central ERIC of the U. S. Office of Education.

SUPPORT PROJECTS BY INDIVIDUALS

Individual research project sponsorship has been encouraged by the Division of Comprehensive and Vocational Education Research. Together with its Advisory Council, DCVER has defined five priority areas which, if used as a guide, they believe will insure that individual project approvals are relevant to significant needs in: (1) Program Evaluation, (2) Vocational Education Curriculum, (3) Vocational Education Resources Development, (4) Vocational Guidance and Career Choice Processes, and (5) Adult and Continuing Education.

A paper titled: "Vocational, Technical and Adult Edu-

cation Research Programs, 1967-1968," issued by the Division of Comprehensive and Vocational Research Education, Bureau of Research, U. S. Office of Education, 400 Maryland Avenue, S. W., Washington, D. C. 20202, further defines these areas for the fiscal year 1968 (July 1, 1967 to June 30, 1968).

Those interested in the form and nature in which project proposals should be prepared and submitted may ask for a copy of the "Office of Education Support for Research and Related Activities" from the Division. A list of research, development and training activity brochures is also available upon request to the Division.

• THE AVA RESEARCH, DEVELOPMENT, SYNTHESIS AND DISSEMINATION PROJECT

Soon after funds were appropriated for research and development activities under the new Act, vocational educators expressed concern. They were not informed fully about procedures and directions of major need and participated in a very limited way in policy decisions. Yet, the vocational educators represent the people on operating levels with responsibility to provide leadership and substance to vocational education programs. The combination of feeling removed from research efforts and the lack of visibility to research, which by Law is intended to relate to

the everyday operation of vocational education programs, to say it succinctly, caused the professional concern of vocational educators to turn to action.

... A Professional Association Acts ...

The American Vocational Association thus continued to press its early recommendations related to decision-making activities and the early dissemination of research findings. It submitted a project, which is identified as "Synthesis and Application of Research Findings in Vocational Education," for partial funding under Section 4 (c). Its purpose

relates to reviewing, selecting, analyzing, synthesizing, translating and the early reporting of research and demonstration projects and activities. The audience to be reached are teachers, coordinators, supervisors, administrators, teacher trainers, guidance personnel, and researchers within each vocational field, and others concerned with manpower development, including the whole gamut of human resource services.

The *American Vocational Journal* will serve as the disseminating medium to reach monthly over 40,000 professionals who are in the best positions to utilize this information through direct application. "Research Visibility" will be included as a unique feature in a separate section of the "Journal" starting in this issue and continuing monthly under its present contract through May 1968, and to May 1969 under a subsequent contract.

...Vocational Education is People...

In determining what reporting pattern to follow, it became crystal clear that the Panel's nine major areas of recommendation provided a natural structure. After all,

these were the building blocks in the Act! Because of this, present plans call for focusing attention in each one of the nine issues between September 1967 and May 1968 on significant research and demonstrations related to one of the major areas.

The theme of the first four issues of "Research Visibility"

for September, October, November, and December is "Vocational Education is People . . ." As might be expected the September report centers around "High School Age Youth"; October, "... People With Educational Needs Beyond the High School"; November "... Youth With Special Needs," and December, "... Youth Unemployed or At Work."

Toward Program/Service Excellence

The second series is intended to direct attention to those projects related to strengthening the "services" identified by the Panel. Therefore, the theme of the 1968 series will be: "Vocational Education Requires Services . . ." The first report in January will identify significant studies, research demonstrations, teacher institutes and leadership conferences, which contribute "... Toward Teacher Excellence"; February, "... Toward Excellence in Establishing Curriculum Laboratories and Developing Instructional Materials"; March, "... Toward Excellence in Human Resource Services" in which vocational guidance, and counseling and ancillary services are considered in an enlarged context; and April, "... Toward Excellence in

Leadership Development." Finally, in May the issue will zero in "... Toward Excellence in Research, Demonstration and Evaluation."

Reports on RCU and Research Centers

Institute support activities of the DCVER, like the Research and Coordinating Units of the States and the two National Research Centers for Vocational and Technical Education, will be reported in the April and May issues.

Primarily, what is reported will center on those projects and activities which were accepted, processed, funded, and coordinated by the United States Office of Education, Bureau of Research, Division of Comprehensive and Vocational Education Research. These will be supplemented in later issues of "Research Visibility" by important listings to related studies, research, institutes, etc., conducted under such other auspices as higher education institutions, industrial organizations, private agencies, foundations, other governmental departments, and by individuals involved in advanced study.

To keep current on research and demonstration activities that are completed each month, each issue of "Research Visibility" will include those that relate to major areas and topics reported in earlier issues.

How far back to begin? Because of time, space, and other limitations, the September through May issues will include projects funded by the United States Office of Education (DCVER) from July 1, 1965 to the publication date of each issue of "Research Visibility." Beyond that, and whenever possible, earlier significant studies may be included.

SUPPORTIVE SERVICES TO RESEARCH AND DEVELOPMENT

The leaders within the American Vocational Association long ago recognized the master role that pure and applied research, experimentation, demonstration, pilot programs, and leadership institutes play in a constantly evolving program. Hence, for many years prior to the Vocational Education Act of 1963, annual and special meetings were planned to encourage, support and provide the catalyst for dealing with needs, organization, techniques, resources, and the like.

The Strength Within Each Vocational Education Field

Out of these actions grew an organizational structure of Divisions to represent such vocational and practical art fields and services as: agriculture, business, distribution, home economics, trade and industrial, industrial art education, and guidance. Added to these are National associations of administrators, technical educators, and researchers. Others may be added as changing time demand. Each Division now includes within its structure Research Committee which in most instances reports to Policy and Planning Committee, and ultimately, to the total membership within that special field of service and supportive association members.



Representative Vocational Education Research Committees

The Division Research Committees include broad representation. The membership may include a State director of vocational education, state supervisor and teacher trainer, a specialist from the American Technical Education Association; teachers, supervisors and local administrators; a regional representative, and supportive personnel. Such agencies as the Division of Manpower and Employment Statistics of the Department of Labor, the Chamber of Commerce, and others are represented. Importantly, the instructional specialist within the Division of Adult, Vocational, and Library Services and another from DCVER, U. S. Office of Education, may be members.

All in all, these committees represent knowledgeable, operational people with genuine concern for research and demonstrations that may be applied to strengthen services in each vocational and practical arts field.

A group composed principally of full-time research personnel has recently been formed as the American Vocational Education Research Association, affiliated with the AVA:



• TIE-IN WITH NATIONAL DISSEMINATION SYSTEMS

Two problems have plagued professional people about research. The one relates to the early release of information to those who need to know the nature and findings of scholarly effort in order to resolve or gain new knowledge about a specific problem or issue; the other, availability. In reaching professional persons who are served by the *AV Journal*, "Research Visibility" will disseminate this information quickly.

Also, now that a national comprehensive information system (ERIC) to serve American education has been established by the U. S. Office of Education, otherwise unavailable materials now are readily obtainable at reasonable cost. It will be possible to obtain a miniaturized duplication on film called "microfiche" of most completed educational research, or a facsimile report which is an almost full-sized hard copy.

"Research Visibility" and "ERIC"

The U. S. O. E. National Educational Resources Information Center System, known as "ERIC" serves the functions of gathering, storing, retrieving, disseminating, and synthesizing information on research reports and other related documents in the educational field.

Completed projects that may not have been processed through ERIC or were not available at publication time,

and those that are in process will be identified by title, principal investigator, and address. Projects will be reported with an acquisition number when completed and they become available through ERIC.

Of particular concern to those in vocational, technical and practical arts education and supporting services is the ERIC Clearinghouse at Ohio State University. This is a valuable integral function of the Center for Vocational and Technical Education. As an approved component of the National ERIC System, the Clearinghouse is one of eighteen that are spread throughout the country.

Each Clearinghouse concentrates on and is responsible for reporting research and related documents for a particular field or aspect of education. This is provided through the monthly Government Printing Office Publication, "Research in Education." Abstracts of materials acquired by the eighteen Clearinghouses, abstracts of completed projects, and projects initiated by the Bureau of Research are to be found in this publication.

The Vocational and Technical Education Clearinghouse is working with State Research Coordinating Units to develop more effective disseminating procedures. Thus, RCU personnel will be able to assist more directly those who are engaged in vocational and technical education in the area served by the Unit.



VOCATIONAL EDUCATION

SYNTHESIS OF RESEARCH • RECOMMENDED APPLICATIONS

IS PEOPLE . . .

HIGH SCHOOL AGE YOUTH

It is always dangerous to classify research and demonstration projects narrowly. Their boundaries oft-times defy dimensioning. Because of this, it should be kept in mind that the original investigator's classification of a project may differ from the grouping in which it is included in "Research Visibility." More important is the accurate reporting out of the results of all research effort so that others may share and apply new experiences and knowledge.

The research and development projects that are completed or are still in process, which were approved by the DCVER, Bureau of Research for fiscal years 1965, 1966, and 1967, were reviewed. From all of these, research projects, which may affect programs and services for high

school age youth, were selected and are reported in this issue under one of six major topics.

To repeat, these six major topics represent recommendations upon which the Panel elaborated as it focused attention on special issues relating to the strengthening of vocational education programs and services for this particular age group.

The reports that are included under each topic synthesize salient findings from completed and available research projects and teacher institutes. Other approved and completed research and demonstration projects that were not available for review and reporting, as well as those still in process, are given in the Bibliography with sources from which more information may be obtained.

Topic One: ACCESSIBILITY to enriched and expanded vocational education program offerings which meet the demands of specially talented youth as well as those with special needs. (Studies 1, 2, 3 and 4. See also studies 12 through 15, in process.)

• 1. "THE SUMMER STUDY ON OCCUPATIONAL, VOCATIONAL AND TECHNICAL EDUCATION (PLANNING CONFERENCE, FINAL AND SUMMARY REPORTS) BY FRANK.

Rapid and explosive changes are taking place in educational concepts, methodology, content, and even in the arrangement of the bricks, mortar and steel of the whole educational enterprise. As educational systems more intelligently and adequately serve the needs of greater numbers of people over more years and for longer periods of time in their lengthening life spans, there is an ever-expanding circle of responsibility and service.

In a growing functional relationship between general education with its basic aims of developing civic and social competence, and that of vocational education as related to preparing for, retraining in, or upgrading for a constantly changing labor market, is there need for educational reform? Must

there be changes in the organization and management of elementary, junior and senior high schools, and the total educational system? Are the physical plants and instructional facilities and materials adequate now and for the future?

Also, what about the preparation of teachers, coordinators, administrators? Do they have the broad vision of what really constitutes cross sections of people and the kinds of education and training to suit their needs? Would changed patterns of professional preparation improve the effectiveness of the teaching/learning process and provide more efficient organization and administration? These are some of the basic issues with which Frank and his committees worked. The answers suggest educational reforms which cut right across the whole educational system.

Updated Educational Philosophy

Since education is built upon philosophy, the "Summer Study" participants either accepted or evolved at least six philosophical foundations—their keystones for change. Briefly stated, they agreed on: (1) accessibility to quality vocational education programs; (2) programs to meet the full spectrum of capabilities of youth and adults; (3) coupling vocational and general education as integral parts of a common core within a total educational program. This core then forms a

base for continuing education on-the-job or in another institution; (4) open-ended continuous vocational education and training opportunities; (5) early orientation to vocational education through exploratory occupational experiences in a setting where the traditional division of education into separate educational subject disciplines is replaced by an educational "mix," starting in the elementary school; and (6) instructional flexibility to prepare students for adaptation to constantly changing employment patterns.

Some Innovations to Consider

Many possible innovations (which naturally, could not have been tried or validated) are reported in the study. Out of these, four major ideas are cited. The first one relates to the forgotten youth within the "20 to 35½" "gray area" of the student population who drop out of school before completing secondary school or graduating from college.

Such an indictment in this advanced technological age against all segments of society says that educational and training programs are not adequate serving the greatest numbers of people. It is also an exciting challenge.

Secondly, the elements of freedom: experiment and to gain new knowledge and experiences were reflected in the recommendation for establishing Area Research and Development Centers.



ters. Here it should be reported editorially that the idea supports the Rutgers' Study to Establish Technical Teacher Technology and Resource Centers, and the establishment of the two National Research Centers for Vocational and Technical Education, and the State Research Coordinating Units (RCU), funded under Public Law 88-210.

A third area of recommendations relates to "learning centers," and adaptations of team teaching. Organizational-wise the "House Plan" was suggested for dividing the student body (within large schools with capability to provide many vocational curriculums) into smaller, more manageable "houses" of students, but with increased and adequate staffing for all instructional and supportive services.

Finally, to give substance to educational reform, the focal point had to center on curriculum planning and instructional materials development. At this important juncture some sample teaching units were developed around a "materials, systems and processes" interdisciplinary teaching/learning approach. This is the crucial key to the proposed reforms.

Who is to Follow Through?

With the study completed, who should now be concerned about the recommendations and their possible application, rejection or modification after further study? Well, it is evident that the study may serve as a resource guide on local and state levels. The findings are equally valuable to general and vocational education administrators, curriculum specialists, guidance and human resource personnel.

Qualified principals of Area Vocational Centers of Technology and Education (an accurate descriptive title for the range of vocational education services to be provided) certainly will want to look at the report, alone, or with their overall and specialized advisory committees who may be suggesting an assessment of a total educational system.

While many parts are controversial, vocational teachers and others involved in advanced studies will find the guide rich in challenging innovative ideas. These need further experimentation, demonstration and research by operational level qualified vocational educators. Vocational teacher educators, supervisory and administrative personnel within State depart-

ments of education, labor market analysts, and manpower coordinators will find organizational, administrative and human resource issues that require further definition, analyzing and try-out under actual conditions.

• 2. "AN EIGHT WEEK SUMMER INSTITUTE PROGRAM TO RETRAIN OFFICE EDUCATION TEACHERS FOR TEACHING BUSINESS ELECTRONIC DATA PROCESSING" BY KOSCHIELER OF FLORIDA (2A); WATSON OF CALIFORNIA (2B); BREESE OF WISCONSIN (2C); CARTER OF COLORADO (2D); and VALENTINE OF NORTH CAROLINA (2E):

One pattern that has proven successful for developing skill and technical know-how to keep instruction updated is to provide the opportunity for qualified teachers to participate in institutes and workshops. Usually conditions, equipment and materials simulate those found in the occupational field. Equally important is that once these capabilities are developed in leaders, they need to be applied as quickly as possible in a local program.

In the last few years, teachers in the field of business and office education and related services have been able to participate in increasing numbers in summer institutes. Fortunately, reports were prepared for at least five regional institutes that were funded in 1965 under Section 4 (c). Since recruiting and enrolling practices were similar and the purposes and outcomes (except for special emphasis particular for each geographic area) were comparable, this one report relates to all institutes.

New Experiences, Updated Courses

Built on experiences with earlier teacher institutes, those of 1965 were designed to upgrade certified, experienced business and office education teachers and some from mathematics. The institutes provided experiences to develop new skills in content, new teaching methodology and new instructional materials related to evolving electronic data processing occupations. These basic skills were developed for application in business and office education programs, extending them to include introduction to business data processing, electronic accounting machines, data processing applications, and beginning computer programming courses.

Teachers who had already developed competencies to this level were able to gain additional skills and

technical knowledge to apply in teaching "second year" advanced courses in computer programming, programming systems, business systems design and development, and advanced programming systems.

A "hands on" approach made it possible for the teachers to execute problems and programs which they had prepared on actual electronic data processing equipment. Field-directed trips to businesses and offices provided added experiences with practical applications under wage-earning conditions. Considerable instructional and other resource materials were developed and obtained for use in home school programs.

The teachers in each institute reported three major successes. • Direct and almost immediate application of the new skills and technology was made by the majority of teachers when they returned to their schools. Thus, business and office education programs were extended and updated to include electronic data processing courses. • The institute technique of updating teachers of business and office education subjects to develop necessary skill and content competencies proved to be desirable and functional. However, because of time limitations, teachers will need to add to the foundational summer institute experiences under actual business/office conditions. • The nature, quality and quantity of teacher-prepared or commercially available instructional and other resource materials have reduced the implementation time lag so that training programs may be started quickly.

What is Available

As pointed out in this issue, it is apparent that instruction in electronic data processing will be provided within secondary schools and post-secondary institutions. Teachers with practical experiences in this field, teacher educators, vocational curriculum development specialists, supervisors, administrators, and guidance personnel on local and state levels will find the organizational plans for the institutes, job survey information, course outlines and teacher guide materials with schedules, teacher papers on various aspects of EDP instruction, bibliographies, etc., as contained in each report of value. The reports may provide a base for planning extensions of business and other office training

programs to include electronic data processing.

• 3. "THE IDENTIFICATION OF COMMON COURSES IN PARAMEDICAL EDUCATION" BY FULLERTON.

Plain facts about shortages of trained persons in the paramedical fields are before the public. Some groups close to the problem feel that the fragmented system of education and training with its tremendous drop-out rates, high instructional costs, limited qualified staff and instructional facilities, are contributing factors.

Therefore, 20 paramedical fields were considered in this study. The researchers wanted to learn whether common elements are contained in curricula for paramedical careers. If identified, would it be feasible to consolidate the content within similar courses for two or more curriculums? And, if common elements were to be combined and still meet the challenge of continuously changing requirements for medical care, would greater efficiency result?

What Paramedical Persons Learned

Paramedical educators were involved who had responsibilities for programs ranging from universities to high schools. They were charged with the gathering of curriculum materials from throughout the United States in the paramedical field in which each specialized. Further, each member was to analyze, classify, and interpret the materials. Paramedical curricula for such groups as registered and licensed practical



nurse, technician, therapist, laboratory assistant and aide were included in the study.

The mass of information gathered required the use of a computer. Print-outs of selected data are to be found in the report. As had been expected, the proliferation of course titles and the extreme variations of course content and clock hours of instructional time, even within the same field, indicated a general absence of standards. These extremes continued across different paramedical fields and in lecture, laboratory and in clinical practice experiences!

A surprising statement is found on what should be done next. A recommendation is made that a job specification/analysis approach be taken to determine teaching/learning experiences (courses, curricula, instructional facilities) needed to develop occupational competency. It should be noted editorially that the time-proven job and occupational analysis technique has been a cornerstone for developing programs in most vocational fields.

Some Applications of the Study

At this point some applications may be suggested. Curriculum coordinators, teachers, supervisors, vocational guidance counselors, and others who are responsible for program development, facilities planning, staffing and student selection in health and medical occupations will find the results useful for preliminary local and state planning efforts.

Teacher trainers may want to study changed requirements based on the

consolidation of courses and parts of curricula. Area directors of vocational education may consider extended programs with more effective utilization of instructional plant, facilities and staff.

• 4. "A FUNCTIONAL ANALYSIS OF PARAMEDICAL OCCUPATIONS AS A FOUNDATION FOR CURRICULUM DEVELOPMENT" BY DECKER.

Those persons who are responsible for curriculum changes for paramedical careers will be interested in this brief report of a second research project. Since this was not scheduled for completion until July 30, 1967, a report was not available for detailed analysis. However, the principal investigator gave four prime purposes for this study. (1) An attempt was to be made to develop procedures whereby the tasks to be performed in two paramedical occupations could be analyzed into sets of clearly defined problems, using strictly operational terms. (2) Then, field investigators were to be trained in these procedures for gathering, analyzing and translating data. (3) As the tasks were functionally defined, these were to be related to course content and sequences in an instructional program. (4) Finally, in the light of new findings, suggested revisions of curricula were to be proposed.

With this added information, concerned operating-level persons, like those referred to in the preceding research study by Fullerton, may want to cross-reference both pieces of research for possible organization, management and curriculum changes.

Topic Two: THE DEVELOPMENT OF SPECIALIZED VOCATIONAL SCHOOLS for metropolitan and enlarged areas with broad diversity of program offerings. **Note:** while the Panel of Consultants had emphasized the need and value of such schools, only two research projects were identified as applying specifically to this topic. However, since neither study was available for reporting, the project titles appear in Bibliography as being in process. (See studies 16 and 17).

Topic Three: MAINTAINING QUALITY STANDARDS • Student selection based on capabilities to profit by instruction • Awarding a meaningful certificate of completion that reflects occupational accomplishment with capability to hold a job • Follow-up studies to match educational programs against job-placement and job-holding ability • Continuous revision of course content based on valid occupational analyses • Developing working relationships with labor, management, industry and manpower to keep current on labor market developments and manpower specifications. (Studies 5 through 8. See also studies 18 through 50, in process).

• 5. "EMPLOYMENT STATUS AND CHARACTERISTICS OF HIGH SCHOOL DROPOUTS OF HIGH ABILITY" BY FRENCH.

The economic survival of any nation lies in its wise development and utili-

zation of its human resources. While stated over and over again, it is paradoxical that many people in general, persons of high or low estate, those with tremendous ability or serious disadvantages . . . all seem to shy

away from the fact that students of high ability should prepare for and enter into the semi- or skilled trades, industries, home-related, agricultural, business, distributive, or technical occupations. And yet, without youth at

adults ranging the full spectrum of abilities, interests and aptitudes in the labor force, this Nation's economic and social well-being would be in jeopardy. Particularly is this true for jobs on the skilled and semi-professional levels and in foremanship, management and supervisory development.

That there is a significant number of "high ability" youth included among those early school leavers who have rejected the schools, is no longer debatable. The continuing annual reports to the President and Congress are very revealing of facts about manpower and education that once were hidden under carpets of administrative convenience. But, as chief school administrators, including leading vocational educators, seek more direct information and experiences upon which to build meaningful educational and training programs, the techniques, materials, and findings provide that much more of the answer to a complex human problem.

Building on the Work of Others

Prior to the work on this particular study, the efforts of earlier educators, manpower experts and research scholars on local, state, and national levels, were researched, reviewed and synthesized up to 1966. While there is no single way of accurately identifying "high ability" students, a beginning benchmark had to be established. One of the criteria for selection included a cut-off score of 110 as an intelligence quotient on tests that had been previously administered. To go back a bit, it should have been said that this in-depth study of a representative sample of dropouts was preceded by a statewide survey of the problem in Pennsylvania.

Who made the study? How many did it include? What did it prove? These and others are valid questions. In this instance, the field testing part of the study was done by long-time experienced guidance counselors, assisted by a handful of school psychologists and another of school principals. The study measured personality traits and goals of high ability dropouts; selected information such as school activities, home conditions, health, and made attitude inventories.

There were a few different approaches used like semi-structured personal interviews and those conducted via telephone calls to friends. Naturally, there was a vocational interest

inventory taken which had its limitations by the popular vocational scales that were used, and the occupational knowledge of youth.

The researchers were trying to:

- factor out conditions and issues in general, and college preparatory and vocational education contributing to dropping out;
- determine the employment status of a representative group of intellectually able students who had dropped out in grades 9 through 12, and the employment levels of their parents;
- establish patterns of interest and personality;
- identify vocational fields and curriculums or courses for which training should be developed; and, finally,
- construct a measuring instrument to identify students who might benefit by a proposed training program.

Some Simple Findings

These are just a few of the findings of what high school dropouts of high ability are saying to guide the educators and the public!:

- A comprehensive functional system of vocational guidance is needed;
- Practical courses and experiences should be included early in a youth's experiences so that upon completion of a program a student may "live in a real world";
- Extended program offerings in skilled level occupations commensurate with the capabilities of these youth must be provided;
- A change in public apathy and attitude must evolve so that true values are placed on blue collar workers whose skills require the same degree of intellectual ability as white collar workers or those continuing into higher education; and
- Provide a more realistic balance between general education and complementary courses within a vocational education curriculum that ultimately leads to employment in jobs at skilled and semi-professional levels.

Foundation for Further Study

School administrators on local and state levels; human resource persons concerned with guidance, counseling and manpower issues and implications; and vocational and general education curriculum specialists will find the study helpful in broadly defining the nature and extent of curriculum change.

Researchers, potential employers, vocational advisory committees, and

other groups concerned with the maximum development of youth with ability will also find the study foundational. Working with such a complex problem, a national or regionally coordinated plan for research and demonstration activities may be needed to validate the findings and assess other facets of the total problem.

Is there need, too, for a tremendous public information program aimed particularly at emphasizing work skills of this important group? Too many disregard the dignity of work . . . and that a Nation's greatness and survival depend on its skilled manpower. . . all of its manpower . . . the full spectrum!

• 6. "THE PREPARATION OF YOUTH FOR EFFECTIVE OCCUPATIONAL UTILIZATION: THE ROLE OF THE SECONDARY SCHOOL IN THE PREPARATION OF YOUTH FOR EMPLOYMENT" BY KAUFMAN AND SCHAEFER.

To what degree do secondary school vocational programs in agriculture, distribution, home economics, office occupations, technical, trade and industrial education meet the needs of students and the community? If the graduates of vocational and technical education programs were measured in terms of acceptance into and advancement in employment, would there be any difference with graduates of general programs and college preparatory programs "that feed into the employment stream?" Lastly, what kind of an image of vocational education do teachers, employers and union officials have? Stated simply, these were the three major problems.

The study reached into 25 high schools in nine large, medium and small-sized cities in New Jersey, Pennsylvania, Ohio and Maryland. The businessmen and labor people who were part of the visiting teams to the schools were looking for an on-site assessment of programs, organizational patterns, physical plant and instructional facilities, how students were selected, and the like.

They went into schools using evaluation materials which had been devel-

oped from such landmarks as the evaluative criteria found in the National Study of Secondary Education Materials and those of the Ohio Vocational Education Evaluation Series.

Program Insights of Graduates

What the graduates said through interviews and questionnaires provided insights into such issues as: job satisfaction, level of employment, school ratings, preparation for employment, etc. Further evaluation was made after conferences with employers, union officials, supervisors and school personnel. All told, there were over 5,000 usable interviews from graduates and over half again as many from supervisors. The returns represented a random sample in which 2,111 were received from graduates of vocational curriculums; 2,023 graduates of general education programs, and 1,017 college preparatory graduates.

To get at the problem of the image of vocational education a somewhat different pattern was followed. Here the returns from an attitude questionnaire were coupled with interviews with employers and union officials and the impressions as gathered by labor/management persons on visiting teams.

The three major issues were surrounded with satellite problems. For instance, when assessing vocational education programs such factors as adaptability and flexibility must be considered. And to apply any kind of valid judgment based on facts, it follows that studies of Census data must be made. These reveal what the community manpower trends are, the mobility and stability of the labor force, occupational distribution patterns, and a whole host of significant occupational information which bears on adaptability and flexibility.

People . . . Needs . . . Programs . . . Services

The research study recommendations which were grouped under major categories are reported at this time.

- In the first category are the recommendations that realistic vocational education and training programs, adequate to the needs of students and the community, must be provided for the full spectrum of abilities and aspirations of youth who must enter employment upon graduation.

Particular attention was called to: the needs of minority group students of average and above average ability;

expanded program offerings to female students; and evolving occupations which require the development of skills and related technical knowledge that cut across two or more vocational fields. A call was made for the assessment of guidance, conventional teaching methods and materials and administrative decisions to develop functional programs and schedules.

- Another category contained suggestions relating to the administration of vocational education and to administrative leaders who are respected by labor and management for being occupationally competent and professionally prepared vocational educators. These administrative and supervisory positions should be at levels at least comparable to top-management administrators from education, business, industry and agriculture and with sufficient supportive staff to provide adequately for all essential vocational education and kindred services.

- Another group of recommendations dealt with the development of vocational teachers and administrators with an even higher level of sensitivity in conceiving, providing, and administering practical programs which meet the total educational needs of youth.

- Suggestions were made on the structure and use of vocational education overall advisory committees and special sub-committees to include representative, knowledgeable and concerned persons. These committees need to view the total educational enterprise, to advise and to counsel so that vocational education programs are constantly attuned to changing needs.

- At this point, recommendations were made for qualified vocational guidance personnel and services, realistic student-counselor ratios, counselors sensitive to the needs of students, and qualified to serve them.

Special attention was drawn to the needs of women, to new employment opportunities for minority groups in occupations where they may not have been employed previously; and even to early vocational orientation, beginning in grade schools.

- Another category related to placement in which the school assumes a more functional responsibility for initial placement and continuous counseling.

- Finally, the follow-up of graduates may provide essential feed-back to assess and modify programs.

Further Study of the Report

It is obvious that the study techniques, materials used and the results have implications for further review at local, state and national levels. They are of value to general and vocational education administrators as well as to teachers in business, agriculture and industry.

Human resource and manpower personnel, curriculum coordinators, guidance personnel and counselors, teacher trainers and curriculum specialists will certainly want to study the inferences drawn by the investigators in the perspective of their own experiences to determine what, when and how program changes should be made.

* 7. "THE CLASSIFICATION OF EDUCATIONAL OBJECTIVES, PSYCHOMOTOR DOMAIN" BY SIMPSON.

For many years, psychologists, researchers, curriculum specialists, and others, have studied "domains" in teaching and learning. Out of this effort, three major domains have been established. These are referred to in such professional terms as "cognitive," "affective," and "psychomotor."

The single word, "cognitive" relates to the processes and activities that take place in the development of intellectual skills and abilities which depend on recall or the recognition of knowledge. The "affective domain" relates to interests, desires, appreciations and attitudes.

Vocational educators, who teach according to the maxim: "learning to do by doing," are concerned mostly with the least explored of the three domains. The "psychomotor domain" centers around the manipulation of materials, equipment, apparatus, implements, and the like, and the development of muscular or motor skills. This study attempted to define general motor ability and to identify manipulative and body movements involved in executing identifiable tasks. In the teaching/learning process, the development of manual or manipulative skills proceeds on a continuum from crude, fumbling experiences requiring correction to a peak where a student perfects and develops the speed, skill and accuracy required for occupational proficiency.

The principal researcher believed that if a system of classification of educational objectives could be established in what is called a "taxonomy," teach-

ers, administrators, curriculum specialists, researchers, etc., would be able to plan learning experiences within courses and curriculums with greater precision.

The ultimate objective, of course, is to relate in a practical way how the educational forces on a student result in changed "behavior." In other words, how efficient and effective are the sum-total of educational experiences for an individual in developing capabilities needed for personal, civic and occupational competence?

Because of the exploratory and experimental nature of this scholarly research effort (which built upon earlier studies that were carefully reviewed) those involved were primarily teacher educators and other college personnel. Involvement of vocational educators at operational levels and from each vocational field was limited. A tentative, untried system for classifying educational objectives in the psychomotor domain was developed as basic to further study that can be conducted either for general and/or vocational education.

• 3. "A PROPOSAL TO PREPARE TEACHERS AND TO DEVELOP INSTRUCTIONAL MATERIALS FOR FOOD SERVICE OCCUPATIONS" BY HOLLANDSWORTH AND BARBOUR.

This "pilot endeavor" tried in an all-too-short three week "experimental workshop" to develop curriculum materials and to upgrade teachers for food service occupations. This impossible task started with a theoretical behavioral science approach.

Then, clusters of jobs that might be grouped under production, sales or service occupations were to be an-

alyzed from an interdisciplinary angle. This task was to be accomplished by teachers, employer representatives, curriculum specialists, and other knowledgeable groups from such fields as: home economics, business, distribution, trades and industries, and other specialties.

Specifications of workers, course content, teaching outlines, curriculum patterns and instructional materials were to be prepared. Even the development of teachers for new areas of instruction was to be accomplished. To make the problem more difficult, there was limited participation by "grass roots" knowledgeable and experienced operational level persons, particularly from the secondary schools.

Building on Proven Experiences

The report itself was critical of the extremely limited accomplishments. It may be noted editorially that vocational industrial teacher educators through years of experience with this kind of problem have developed a sophistication for forming and working with representative vocational advisory committees.

Further, they have had extensive experience making occupational studies, developing valid vocational courses based on trade and job analyses, organizing shops and laboratories to simulate actual occupational conditions, preparing current instructional materials and providing occupational upgrading inservice institutes for teachers. These are cited so that others undertaking similar studies and workshops may conserve human and material resources by building upon such experiences and understandings rather than to "rediscover America."

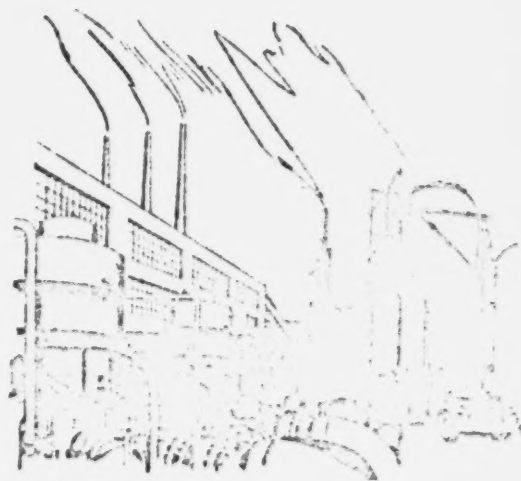
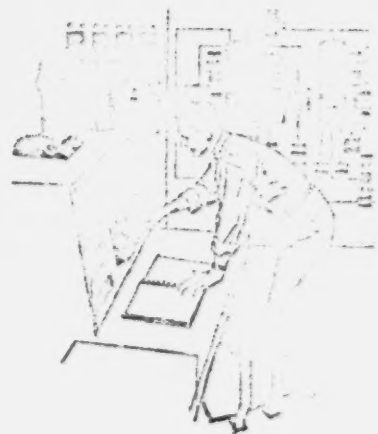
Topic Four: CURRICULUM PLANNING AND CORRELATION • The development of vocational education curriculums for a cluster of job titles • opportunities to advance to higher level jobs through advanced study • apprenticeship and other on-the-job programs. (Study 9. See also, studies 51 through 66, in process).

• 9. "A STUDY OF THE AVIATION MECHANICS OCCUPATION" BY ALLEN.

The vigilance needed to safeguard human life and comfort, important cargoes, capital investment, and National security, is provided by skilled persons in the aviation mechanics occupation. The capabilities of these skilled craftsmen and technicians to perform manipulative skills and to exercise mature judgment based on a solid foundation of related technical

knowledge, once developed, must be kept current with an ever-evolving technology.

Since the inception of this industry, the public and private schools have trained students for employment as certified aviation mechanics. However, these efforts must be multiplied for preparing greater numbers of individuals to enter into the labor force, to retrain those whose skills must be updated, and to extend the work skills



and related technical knowledge of other skilled persons for advanced positions. Trite as it may sound, this calls for an acceleration and redirection of efforts, greater effectiveness in the teaching/learning processes, improved efficiency, and early inclusion in the curriculum of new techniques, materials, and industrial changes.

Different Teaching Levels/Methods

This National research project involved airlines and aviation companies employing certified air frame and/or power plant mechanics. Among other things, it defined the technical knowledge and skills that should be developed at different teaching levels, using different methods. The study also tried to answer the questions: "Are there sufficient similar teaching/learning elements that may be clustered into a common curriculum 'core'?" and, "What is the scope and range of training in industry?"

Concerned Professional Persons

Technically and mechanically oriented research analysts were the na-

tional field survey technicians. The report of the cooperative work by this group, the study team, and a representative National Industry Committee should be valuable to teachers, supervisors, curriculum specialists, industrial teacher trainers, and area vocational administrators concerned with curriculum development and program implications. Industrial training directors and other manpower development personnel in industry and employment services, and vocational guidance persons will gain new insights into educational and training specifications for the aviation mechanics occupation.

Overview of Work

The report gives an overview of work performed under each major category and sub-topic that relates to what the mechanic does with components, systems, materials, etc. These are given in terms of the percent of mechanics who perform a particular task, its frequency, the technical knowledge and manipulative skills required, and the extent of industrial training.

(Changed Concepts of Testing)

The approach and the suggestions for written and comprehensive examinations on teaching and testing levels are especially important. Such examinations are structured around knowledge, comprehension, application, analysis and synthesis (the ability to put knowledge and skills together to carry out a specific job).

While concerned principally with curriculum change, the study has other implications. The projections include • the conduct of national teacher institutes and workshops for updating teachers in content and methodology • changed instructional plants attuned to a continuously changing curriculum and new approaches; and • curriculum follow-through in which new materials, skills, knowledge, etc. are immediately included as current instruction.

Possibly the most significant projection is that the data and report now be translated and applied in a practical way through the establishment of pilot programs to be followed later by evaluation.

Topic Five: CHANGING CURRENT PROGRAMS TO MEET EVOLVING NEEDS • Extending inschool secondary school offerings in distributive education • modifying home economics courses to develop homemaking programs that provide unique effective service, especially to girls in disadvantaged families • properly defining vocational business education courses to ensure employability • the enrichment and extension of agricultural courses • determining curriculums, and instructional time requirements in trade and industrial education. (Study 10. See also, studies 67 through 81, in process).

• 10. "DETERMINING KINDS OF GAINFUL EMPLOYMENT IN WHICH FORMER STUDENTS FROM ARKANSAS SECONDARY SCHOOLS ENGAGE, AND WHAT KNOWLEDGE AND SKILLS HOMEMAKING CURRICULUMS MAY CONTRIBUTE TO THESE GAINFUL OCCUPATIONS" BY ROBERTS.

One of the concerns of the Panel of Consultants centered around the extension of services in homemaking programs to include preparation for wage-earning jobs that depend on "homemaking" skills and knowledge.

This particular research effort is accurately described by its title. Although related to one state, such findings as those dealing with curriculum modifications and program enrichment have relevance to general and vocational education administrators, teacher trainers, researchers and teachers in the field, curriculum coordinators and guidance personnel anywhere in the United States.

Interestingly, the final report indicated that for a ten-year period, most

former homemaking students who responded found employment upon graduation from high school in clerical, sales and service occupations. However, within the 70 occupations which were studied, primarily by home economics teachers, the job descriptions included personality factors and technical knowledge and basic skills found to be included in homemaking courses.

Answers In The Report

While this is not an in-depth curriculum study originating in occupational analyses with job skills identified from complete job analyses, the report contains valuable information in answer to three fundamental questions:

- What kinds of jobs do graduates of homemaking courses get when they do accept gainful employment?

- To what degree are the skills and technical knowledge required in wage-earning employment related to those

contained in vocational homemaking courses? If they do relate but are not included, is it possible without reducing the homemaking function to enrich and extend courses to include the development of basic competencies needed by young women for employment?

- Finally, do the experiences and other qualifications of the teacher, and the size, location and organization of the high school influence the employment of graduates?

Persons reviewing the report may want to consider another dimension to add to the significant contribution home economics education may make through its exploratory practical arts function. For it is at this important juncture in students' lives that many seek to transfer to other vocational fields for more specialized preparation for employment in business, distribution and marketing, agriculture and kindred occupations, or the trades, industries and technical pursuits.

Topic Six: PROGRAM GROWTH AND DEVELOPMENT • through the extension of programs, especially for health occupations, service occupations and technical occupations. (Study 11. See also, studies 35 through 39, in process).

• 11. "A DETERMINATION OF NEEDED ADJUSTMENTS AND EXTENSIONS IN THE CURRICULAR PATTERNS OF VOCATIONAL EDUCATION IN AGRICULTURE" BY TAYLOR.

"Involvement," "valid occupational analyses" and "knowledgeable and concerned specialists" from education, business and industry represent the key ingredients which assured the early use of the results of this off-farm agricultural education study.

The steps taken to carry out the specific purposes may be identified by grouping the major activities into such functions as: planning, organizing, developing, promoting, disseminating, trying-out, revising, establishing pilot programs, evaluating, refining and, finally, adopting new curriculums.

Organization, Development and Evaluation

Although this National study was specifically directed to off-farm agricultural programs, the planning, procedures, and implementation techniques may be adapted to all other vocational fields. The report itself is only one item in a "package." It indicates very clearly the historical sequence of major activities; serves as an excellent example of organizational patterns for conducting a research project of this type; traces the continuous evaluation processes, and shows how concerned people assisted at each stage, including the most significant one of implementation.

Information is included on the Task Force and its planning and materials

development functions; the structure of advisory committees and committees on the evaluation of materials prepared by the Task Force and others, and the research findings.

A National seminar provided a forum. Here educators, business and industrial leaders came to review, discuss, evaluate and promote a program that should meet more adequately the needs in agricultural supply (sales and service occupations), agricultural machinery (service occupations), ornamental horticulture (service occupations) and agricultural chemicals.

Feed Back and Early Application

Under the leadership of Taylor, the study was planned to provide for continuous feed back resulting from constant review and evaluation . . . always by persons with particular and specialized knowledge! A major contribution lies in the practical program changes which are suggested at the "grass roots" level in preparing students for entry into off-farm agricultural occupations.

In addition, state level program planning materials were developed. Suggested administrative actions and decisions to establish pilot and demonstration programs are contained in separate brochures. These cover the four subject areas of: agricultural chemical technology, agricultural mechanization, ornamental horticulture and nursery, and agricultural supply.

Other course materials for local programs were based on findings in

agricultural occupations studies and revised program materials were developed by subject matter specialists from business, industry, teaching and university/college staffs. Fortunately, copies of all curriculum and program development materials were sent to head state teacher educators and head state supervisors in agricultural education for use within each state.

Mention should be made of the five important area meetings throughout the United States in which over 300 teachers, supervisors, teacher trainers, administrators, and employing organizations participated. From the sum-total of key participants involved, the development of vocational education programs for off-farm agricultural occupations is moving rapidly.

The study itself and the complementary administrative development, curriculum and other materials which comprise the "package" serve as excellent examples of: a well-organized plan, well-executed procedures which resulted in the preparation of necessary materials to effect change; and a pattern for continuous evaluation and program refinement.

The materials should be valuable, too, to manpower personnel, human resources coordinators, and others involved in curriculum change and the guidance of youth and adults.



"PLAIN TALK"

Deliberate use was made of the Panel's recommendations and the definition of purpose of the Vocational Education Act. For, it is in terms of the defined needs and responsibilities as expressed through some form of legislative intent that the end results of conceiving, planning, developing, reporting, disseminating, applying, and evaluating may be more directly assessed.

"Plain Talk" provides a vantage point to look back on . . . the sum-total of research effort and its impact to on-the-job-needs . . . in other words, the how, who, why, when and where, and then quickly ahead to discover ways in which the total research effort may be strengthened.

Obviously, time and space will be limiting factors on the observations that are reported out in "Plain Talk." These recorded observations and suggestions for a plan of action are intended to be honest, constructive attempts to strengthen the total vocational and practical arts education programs through a strengthened and expanded research effort.

It is Obvious That . . .

• The three main groups concerned with vocational education should pool their resources and talents to establish the framework, dimensions, and specifications for a realistic, valuable, "grass roots" research and demonstration program. Here, reference is made for the present to the Division of Adult Vocational and Library Services, the Division of Comprehensive and Vocational Education Research and the American Vocational Association.

• There is limited correlation of national, regional and state effort. Thus, there is need to develop a functional, overall correlated plan for research and development which fulfills the mandates of the Act.

• Research efforts, particularly as directed at high school age youth, have barely scratched the surface of need, indicating the complexity to planning, conducting and implementing such activities. This calls for greater involve-

ment of qualified operational level persons and an acceleration of research effort.

• Clearer delineation should be made of the level of local and state vigor and support in order to limit duplication of effort and to require state financing where a project should be carried on as a state function. This action will free limited research/development funds for major program development activities affecting greater numbers of high school age youth.

• Research must be influenced directly by those who are to use it. Was this not one of the underlying concerns which resulted in increased attention and funds for vocational education? Here, again, leading vocational educators with first-hand experience need to be involved earlier to guide and make decisions on major research effort and its impact on vocational education.

NOTE: The inclusion of a report in this issue relating to programs for/and services to ". . . High School Age Youth" is not to infer that the principal investigator classified the project this same way or that the findings or results are not applicable to other levels of instruction.

Subsequent issues of "Research Visibility" will report changes continuously that may result as (a) new projects are approved, (b) other completed manuscripts are reviewed, (c) additional abstracts are made available, and (d) further information is received about the exact status of a project.

RESEARCH, DEMONSTRATION, INSTITUTES (reported in this issue)*

Topic One: PROGRAM ACCESSIBILITY

• 1 "The Summer Study on Occupations, Vocational and Technical Education" by Frank, Nathaniel H., Massachusetts Institute of Technology, Cambridge, Mass. (Planning Conference Report, Project # 5-0036), 1965, 24 pages (VT 002 489); (Final and Summary Report, Project # 5-0089, 1965, 139 pages VT 002 487)

• 2 "An Eight Week Summer Institute Training Program to Retrain Office Education Teachers for Teaching Business Electronic Data Processing" by:

2(a) Koschler, Theodore A. Miami-Dade Junior College, Miami, Fla. (Project # 5-0029) 1965, 217 pages (VT 002 306);

2(b) Watson, Norman E. Orange Coast Junior College District, Costa Mesa, Calif. (Project # 5-0041) 1965, 27 pages (VT 002 200);

2(c) Breece, William E. Wisconsin Institute of Technology, Milwaukee, Wis. (Project # 5-0010) 1965, 24 pages, ERIC # ED 010 499; EDRS MF-\$0.09, HC-\$0.96;

2(d) Carter, Forest C. Colorado State University, Fort Collins, Colo. (Project # 5-0028) 1965, 34 pages (VT 002 304); and

2(e) Valentine, I. E. North Carolina State Board of Education, Raleigh, N. C. (Project # 5-0030) 1965, 44 pages (VT 003 008)

• 3 "The Identification of Common Courses in Paramedical Education" by Fullerton, Bill

J. (Project # 5-8398) 1966, 172 pages. ERIC #ED 010 190; EDRS MF-\$0.27, HC-\$6.88

• 4 "A Functional Analysis of Paramedical Occupations as a Foundation for Curriculum Development" by Decker, John P. Arizona Health Services Education Association, Phoenix, Arizona, 1966 (Project # 6-2193)

Topic Two: SPECIALIZED SCHOOLS

(No topics reported)

Topic Three: QUALITY STANDARDS

• 5 "Employment Status and Characteristics of High School Dropouts of High Ability" by French, Joseph L. The Pennsylvania State University, University Park, Pa. (Project # 5-0051) 1966, 185 pages (VT 002 724)

• 6 "The Preparation of Youth for Effective Occupational Utilization" by Kaufman, Jacob and Schaefer, Carl. Pennsylvania University, University Park, Pa. (Project # 5-0087) February, 1967, 434 pages (VT 002 636)

• 7 "The Classification of Educational Objectives, Psychomotor Domain" by Simpson, Elizabeth. University of Illinois, Urbana, Ill. (Project # 5-0090) 1966, 45 pages. ERIC#ED 010 368; EDRS MF-\$0.09 HC-\$1.80

• 8 "A Proposal to Prepare Teachers and to Develop Instructional Materials for Food Service Occupations" by Hollandsworth, Hel-

en and Barbour, Henry O. Michigan State University, E. Lansing, Mich. (Project # 5-0153) February 1966, 97 pages. ERIC#ED 010 370, EDRS MF-\$0.13, HC-\$3.88

Topic Four: CURRICULUM PLANNING

• 9 "A Study of the Aviation Mechanics Occupation" by Allen, David, Division of Vocational Education, University of California, Los Angeles, Calif. (Project # 5-0169) 1966, 235 pages. ERIC#ED 010 279, EDRS MF-\$0.36, HC-\$9.40

Topic Five: CURRICULUMS TO MEET NEEDS

• 10 "Determining Kinds of Gainful Employment in which Former Students from Arkansas Secondary Schools Engage, and What Knowledge and Skills Home-making Curriculums May Contribute to These Gainful Occupations" by Roberts, Roy W. University of Arkansas, Fayetteville, Ark. (Project # 5-0002) 1966, 93 pages. ERIC#ED 010 013 EDRS MF-\$0.13 HC-\$3.32

Topic Six: PROGRAM GROWTH

• 11 "A Determination of Needed Adjustments and Extensions in the Curricular Patterns of Vocational Education in Agriculture" by Taylor, Robert E. The Ohio State University, Columbus, Ohio. (Project # 5-0031) 1966, 103 pages. ERIC # ED 010 497; EDRS MF-\$0.18 HC-\$4.12

**RESEARCH DEMONSTRATIONS;
INSTITUTES**
(in process)*

Topic One: ACCESSIBILITY

- 12 "Approaches to Use in Assessing Needs for, Content of, and Certain Factors to be Considered in Preparing for Gainful Employment" by Cozine, June. (Project # 5-0026) ERIC # ED 010 004; EDRS MF-\$0.18, HC-\$3.24
- 13 "An Experimental Vocational Education Institute for the Preparation of Teacher Coordinators of Newly Emerging High School Vocational Programs" by Samson, Harland E. University of Wisconsin, Madison, Wis. (Project # 5-0092) 1966, 144 pages. ERIC # ED 010 500; EDRS MF-\$0.27 HC-\$5.76
- 14 "Curriculum Development and Training Program for Food Service Employees" by McKinley, Margaret and Chadderdon, Hester. Iowa State University, Ames, Iowa. (Project # 5-0129)
- 15 "Development of Marketable Typing Skill: Sensory Processes Underlying Acquisition" by West, Leonard J. City University of New York, N. Y. (Project # 5-8434) 1966, 27 pages. ERIC # ED 010 012; EDRS MF-\$0.09 HC-\$1.06

Topic Two: SPECIALIZED SCHOOLS

- 16 "Experimental and Developmental Study of a Four Year Comprehensive Vocational Educational Program" by Benham, Lloyd G. Hudson Public Schools, Hudson, Ohio. (Project # 5-0115)
- 17 "Occupational Training Centers for 16-18 Year-Old Youth" by Handler, Harry. Los Angeles Unified School, Los Angeles, Calif. (Project # 6-2958)

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- 18 "Using the Printing Trade as a Pilot Area for the Development of a National Vocational-Technical School Achievement Testing Program" by Stover, William F., Ohio Trade and Industrial Education Service, Columbus, Ohio. (Project # 5-0037)
- 19 "Identifying Characteristics of Practical Nursing Students for Use in Guidance and Selection" by Tate, Barbara. National League for Nursing, New York, N. Y. (Project # 5-0039)
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- 21 "Conference on Labor and Vocational Education" by Allen, Russell. Michigan State University, East Lansing, Mich. (Project # 5-0130)
- 22 "Characteristics of Non-College Vocationally-Oriented School Leavers and Graduates" by Mallinson, George. Western Michigan University, Kalamazoo, Mich. (Project # 5-0142)
- 23 "State and Local Governments as Employers of Youth Trained in Vocational-

Technical Schools" by Sehten, Edward V. University of Wisconsin, Madison, Wis. (Project # 5-0174)

- 24 "Entry and Job Changing in Large Metropolitan Labor Market Area" by Ullman, Lloyd. University of Calif. (Project # 5-0176)
- 25 "Effectiveness of Selected Psychological Tests in Predicting Vocational Success" by North, Willard E. Central Missouri State College, Warrensburg, Mo. (Project # 5-0181)
- 26 "Application of the Judgmental Procedure to the Development of Programs of Vocational and Practical Arts Education" by Lockette, Rutherford E. Trenton State College, State Department of Education, Trenton, N. J. (Project # 5-0190)
- 27 "An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes" by Darcy, Robert L. Ohio University, Athens, Ohio. (Project # 5-1203)
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- 29 "Educational Activities Within Business and Industry in Richmond, California" by Swanson, Chester J. University of California, Berkeley, Calif. (Project # 5-1364)
- 30 "Information Sheet Organization in Industrial Education" by Pucel, David J. University of Minnesota, Minneapolis, Minn. (Project # 5-8453)
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- 43 "Directive-Non-Directive Teacher Effectiveness" by Tuckman, Bruce. Rutgers-The State University, New Brunswick, N. J. (Project # 6-2300)
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- 45 "Methods of Increasing Student Achievement in Technical Preparatory Programs," 1966 Conference. Van Hall, Milo E. (Project # 6-3303). ERIC # ED 010 075; EDRS MF-\$0.09 HC-\$0.55
- 46 "Mathematics Competencies of High School Students in Relation to Screening Practices of Major Employers" by Landis, William H. Contra Costa County Department of Education, Pleasant Hill, Calif. (Project # 6-3323)
- 47 "A Junior High School Industrial Technology Curriculum Project" by Towers, Edward R. The Ohio State University, Columbus, Ohio. (Project # 7-0003)
- 48 "Workshop on Organization and Operation of Cooperative Work Experience Programs in Trade and Industrial Education" by Harris, J. N. Tuskegee Institute, Tuskegee, Ala. (Project # 7-0144)
- 49 "Workshop to Plan for Education and Manpower Coordination in Selected Model Cities" by Healy, Patrick. National League of Cities, Washington, D. C. (Project # 7-1199)
- 50 "A Symposium on Educational Manpower" by Davies, Donald. National Education Association, Washington, D. C. (Project # 7-3207)

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- 51 "Development and Evaluation of an Experimental Curriculum for the New Quincy (Massachusetts) Vocational-Technical School" by Gagne, Robert M. American Institute for Research, Pittsburgh, Pa. (Project # 5-0009)
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- 54 "An Integrated Vocational Education Services Pilot Program in a Secondary School" by Agan, Ray, Kansas State University, Kans. (Project # 5-0027)
- 55 "Establishment of a Course of Study in American Industry as a Transitional Subject Between General and Vocational Education" by Pace, Wesley L.; Flug, Eugene R. Stout State University, Menomonie, Wis. (Project # 5-0053)
- 56 "Development of a Curriculum and Materials for Teaching Basic Vocational Talents" by Daily, John, George Washington University, Washington, D. C. (Project # 5-0061)
- 57 "Curricula Implications of Automatic Data Processing for Educational Institutions" by Bangs, Kendrick F. University of Colorado, Boulder, Colo. (Project # 5-0144)
- 58 "Identification of Common Behavioral Factors as Bases for Pre-Entry Preparation of Workers for Gainful Employment" by Sjogren, Douglas D. Colorado State University, Boulder, Colo. (Project # 5-0149)
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- 63 "A Research and Development Program for Training in Micro-Precision Skills" by Wales, Hugh C. University of Illinois, Urbana, Ill. (Project # 6-2336)
- 64 "A National Survey: High School and Student Characteristics, and Their Relationships to the Occupational and Post-High School Educational Experiences of Trade and Industrial Vocational Course Graduates" by Eninger, Max W. American Institute for Research, Pittsburgh, Pa. (Project # 6-2414)
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- 66 "Computer-Aided Drafting and Design Summer Institute" by Morphonios, Alex. Miami-Dade Junior College, Miami, Fla. (Project 7-0135)

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- 68 "Development and Evaluation of Instructional Programs in Ornamental Nursery, Floriculture, and Turf Occupations for the Northwestern United States" by Love, Gene M. Pennsylvania State University. (Project # 5-0022)
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- 70 "An Integrated Vocational Education Service Pilot Program in a Secondary School" by Agan, Ray, Kansas State University. (Project # 5-0027)
- 71 "Training Program for Teachers and Leaders of Gainful Employment Training Programs in Home Economics" by Cozine, June, Oklahoma State University, Stillwater, Okla. (Project # 5-0053)
- 72 "An Experimental Evaluation of Approaches to Preparing High School Students for Agricultural Occupations Other Than Farming" by Coster, John K. University of Nebraska, Lincoln, Nebr. (Project # 5-0069)
- 73 "Developmental Programs in Animal Science" by Stone, Walter, State University of New York, Nelhi, N.Y. (Project # 5-0071)
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- 78 "A Process for Determining Vocational Competencies in the Performance of Nine Essential Activities for Sales Personnel" Albrecht, James J. ERIC ED 010 070 1966 Pages 149 MF \$.27 HC \$.56 (Project # 5-0156)

- 79 "An Experience with the Life and Work of the Disadvantaged for the Pre-service Education of Home Economics Teachers" by East, Marjorie, Pennsylvania State University, University Park, Pa. (Project # 5-0167)

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- 83 "Survey to Determine Appropriate Occupational Training Programs in the Field of Distribution and Marketing at Various Levels of Education" by Peck, Charles E. University of Washington, Seattle, Wash. (Project # 5-1327)

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- 85 "Regional Conferences on Education, Training and Employment" by Bertolact, Frederick, The Research Council of the Great Cities Program for School Improvement—Chicago, Ill. (Project # 5-0010)

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- 88 "The Development and Improvement of Directed Work-Experience Programs in Expanded Vocational Education Offerings in Agriculture at the Secondary School Level" by Cushman, Harold R. Cornell University, Ithaca, N.Y. (Project # 5-0161)

- 89 "A Pilot Project in Curriculum Development for Work, Experience and 'Occupations'" by Groole, Marvin C. Oakland Unified School District, Oakland, Calif. (Project # 5-0163)

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